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UNITED STATES DEPARTMENT OF AGRICULTURE
Director of Information
Washington, D. C.

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October 25, 1937.

MEMORANDUM FOR BUREAU EDITORS.

The Government Printing Office has completed an 18-month survey of the cost and method of producing each unit of its finished product. This was done (1) so the price charged for each printing job will more nearly represent the actual cost and (2) to provide the G.P.O. with more accurate information as a basis for manufacturing policies. As a result of the survey the Office put into effect on October 15, 1937 a new scale of prices.

Heretofore the policy of the Government Printing Office was to raise or lower the prices for all operations by the percentage by which receipts for an accounting period varied from expenses for the particular period, regardless of the fact that new inventions or economies in certain operations made it possible to complete some jobs more cheaply. On the other hand changes in requirements made some jobs more expensive.

Bills and estimates prepared after October 15 will correct these inequities. In many instances they will vary greatly from those previously rendered for similar work. Each particular Department of the Government will be charged more accurately in accordance with the cost of the types and classes of work it orders. There has been no general increase in the scale - merely increases or decreases in particular unit charges which will practically offset each other. If requisitions from your bureau cover a variety of work, the cost of your printing for the year should be about the same for the same amount of work as it would have been under the old scale.

Jobs involving unusual typography or format and much composition and short press runs will be more expensive. Charges for alterations will be much higher. Straight line work, eliminating unusual features, and involving long press runs will be cheaper.

It is difficult to determine in advance how the new scale will affect the allotment to any particular bureau. However, we will watch its effects and work with you in securing any possible advantages or avoiding any disadvantages. It is clear at the outset that all bureaus should hold down as much as possible on authors' alterations, unusual sizes involving much waste in trimming, unusual typography, and other things which now will be much more costly.

Sincerely yours,

Jerome J. Henry,
Assistant to the Director.

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Material for a Popular Bulletin

An author has assembled the following skeleton of facts, and he desires your assistance in helping him to arrange them in logical order for effective presentation to those particularly interested in the subject. After he gets your expert advice he plans to assemble additional material to complete the framework you suggest.

He asks you to do the following:

1. Suggest a suitable title for the bulletin.

2. Prepare an appropriate topical outline of the material that should be included and list all the heads and subheads, properly indented, in a table of contents in logical order.

3. Carefully select the material that is to be included, cut and paste and arrange it under the appropriate heads and subheads you have prepared, and mark for deletion the parts you consider unsuitable for the purpose. In the margins opposite the omitted material state briefly the reasons for its rejection.

Roaches are among the commonest and most offensive of the insects which frequent human habitations. They belong to a very extensive family, the Blattidae, comparatively few of which, fortunately, have become domesticated. In temperate countries some four or five species are very common household pests, and a few occur wild in the woods; but they are essentially inhabitants of warm countries, and in the Tropics the house species are very numerous, and the wild species occur in great number and variety, many of them being striking in shape, coloration, and size, the wing spread of one species being more than 6 inches. Under suitable conditions in the more northern latitudes the domestic species often multiply prodigiously, and even in the far north a species occurs in the huts of the Laplanders, and sometimes entirely devours the stores of dried fish put away for winter consumption.

Fleas are of many kinds. The dog flea normally feeds on dogs and cats, but when excessively numerous may prove a troublesome pest to man; the human flea normally attacks man, but may be found on a number of other animals; rat fleas, in the absence of their usual hosts, will bite man, and these fleas are the ones ordinarily responsible for the inoculation of man with bubonic plague.

The house roaches are rather uniformly dark brown or dark colored, corresponding with their habit of concealment during daylight. They are smooth and slippery, and in shape broad and flattened. The head if bent under the body, so that the mouth parts are directed backward and the eyes directed downward, conforming with their groveling habits.

The common clothes moths are usually seen flying in darkened corners and just beyond range of the brightest rays of the lamp. They prefer darkness. They are frightened when clothing and other objects are suddenly moved, and are then seen running rapidly or flying to conceal themselves in the creases of clothing, cracks, or other dark places.

There are two very common species of clothes moths. They are the case-making clothes moth (Tinea pellionella L.) and the webbing clothes moth (Tineola biselliella Hummel). The tapestry moth (Trichophaga tapetzella L.) is less often found, though it may become destructive.

Certain general principles regarding the control of fleas are applicable to nearly all species, but some modifications of the methods employed are necessary for different species, and under the different conditions in which they exist. Two steps are necessary to cope with the pest: (1) The destruction on the host of the adults which are producing the eggs, and (2) the clearing out of the immature stages which are breeding in or under the house.

Undoubtedly the most efficient remedy for the bedbug is to fumigate the infested house or rooms with hydrocyanic-acid gas. This gas will penetrate into every crevice in the house or room where the bedbugs conceal themselves and has an immediate effectiveness which gives it an important recommendation, especially when the infestation is considerable or of long standing. This method of fumigation should be intelligently employed, as the gas is deadly poisonous.

The distinctively house-inhabiting ants, such as the little red or Pharaoh's ant, and other imported species nesting in the woodwork, masonry, or articles of furniture, etc., are often very difficult to eradicate because of their inaccessibility. If the nest can be located by following the workers back to their point of disappearance, the inmates of the nest, if near by, may sometimes be reached by injecting a little disulphid of carbon, kerosene, or gasoline into the opening by means of an oil can or small syringe.

Trichninosis is a parasitic disease caused by small roundworms bearing the scientific name, Trichinella spiralis, and commonly known as trichinae. These parasites occur primarily in human beings, hogs, and rats, and to some extent in dogs and cats.

The stable fly, or stock fly, is one of the most important sources of annoyance to livestock throughout the United States. "Stable fly" is not entirely satisfactory as a common name for this pest, as it is frequently abundant in open fields and along roadways and is not uncommonly encountered about the house. Nevertheless it is found about stables more frequently than anywhere else. In certain localities such names as the "stable fly," "wild fly," "straw fly," and "biting house fly" are applied

to it. As the last name suggests, this insect is frequently confused with the house fly. The common house fly is not capable of biting, its mouth parts being soft and broad on the tip.

Since the discovery that mosquitoes are not only nuisances, but also conveyors of malaria, yellow fever, filariasis, and dengue or break-bone fever, a great deal of remedial work has been done by individuals and communities, and, during the last few years, by the medical departments of the Army and Navy and the Public Health Service in the vicinity of camps, cantonments, and naval stations.

Popularly the yellow-fever mosquito has been called in the Tropics the house mosquito, the day mosquito, the banded-legged mosquito, and is now generally known as the yellow-fever mosquito. Sometimes also it is known popularly by one of its discarded scientific names, the Stegomyia mosquito.

There are now in North America a considerable number of species of ants which under favoring conditions may inhabit dwelling houses or other heated buildings, constructing their nests and breeding continuously in the woodwork or masonry, or in articles of furniture or of ornament, and subsisting on food materials which they find about kitchens and pantries or scattered in living rooms.

The Argentine ant has greatly exceeded other species in its injury. Other ants may make themselves troublesome, but the Argentine ant goes so far as to cause homes to be vacated in an infested neighborhood. It becomes important in agriculture as well, damaging fruit and other crops by its propagation of scale insects. The worker ants are most commonly seen. Small in size and dark brown in color, they are able to invade practically every part of ordinary dwellings, stores, etc. The Argentine ant is almost omnivorous, eating most cooked foods and a considerable percentage of the raw foods found in the average pantry.

When you find such plants as seedling tomatoes, cabbage, lettuce, and melons cut off near the ground, especially in the spring and early summer, it is fairly certain that a cutworm is responsible for the damage.

It is easy to get rid of cutworms by using a poisoned-bran bait. Thoroughly mix the poison with the bran. This is important. Each particle of bran must carry a little poison to get a good kill.

The spinose ear tick takes its common name from the characteristic spines on the body of the young tick and from its habit of locating in an animal's ears.

Any dense smoke will drive away mosquitoes, and various smudges are used by campers. For household use a number of different substances have been tried.

Like all other flies, the stable fly has four stages in its life history--namely, the egg, larva, pupa, and adult.

The life of the flea has four distinct stages, as is the case with many other insects; these stages are the egg, larva, pupa, and adult.

The remedies here listed for the killing of clothes moths, or for protection against them, have been thoroughly tested and are in general use by the public. They can be recommended without reservation if used with an intelligent understanding of their good or bad features and in accordance with directions given.

Here are some suggested regulations for preventing termite attack which should be made a part of city building codes. In repairing termite-damaged buildings use the same suggestions as for the construction of new buildings. If you do so you can get rid of termites in buildings where they are already working.

The common intestinal roundworm or ascarid is one of the most injurious of the various kinds of parasites that infest the pig.

Although the yellow-fever mosquito apparently does not fly far, it is readily carried to great distances accidentally by artificial means. Vessels once infested, may carry the species to far-distant ports. The yellow-fever mosquito has been found in New York upon vessels coming from Vera Cruz, and it is by such carriage of infected mosquitoes that the early outbreaks of yellow fever in Philadelphia and other northern cities are to be accounted for.

Complete development from the deposition of the egg to the emergence of the adult stable fly may take place in 19 days, or even in 14 days, according to some investigators.

The common American roach has been reared from the egg to the adult state in the insectary. Young hatching July 11 from an egg case received from Eagle Pass, Tex., reached the adult stage between March 14 and June 12 of the following year, indicating a period of nearly 12 months for complete development.

In 1881 Dr. Carlos Finlay, of Habana, proposed the theory that yellow fever, whatever its cause may be, is carried by means of a certain mosquito from man to man.

To aid in preventing roundworms in pigs, remove all litter and trash from the farrowing pens and thoroughly clean them with hot water, soap, and lye, and the vigorous use of shovel and brush.

Termites are not true ants, although they look much like them and live in large colonies made up of different forms. Termite damage is always hidden inside the wood. The termites which do the greatest damage

to buildings and their contents, especially by weakening the supporting timbers, are those which live in the ground and attack wood indirectly from the ground.

It is important in a fight against clothes moths to know something about their biology. Each generation is called a life cycle because the insect keeps passing through a successive round of stages, consisting of the egg, the larva, the pupa, and the moth. The following facts concerning these stages of the life cycle relate particularly to the webbing clothes moth, but must be taken into consideration in any intelligent campaign against clothes moths of other species as well.

In Panama a mosquito larvicide made as follows is being used: 150 gallons of carbolic acid is heated in a tank to a temperature of 212° F., then 150 pounds of powdered or finely broken resin is poured in. Ths mixture is kept at a temperature of 212°.

When animals are grossly infested and the ear canals packed full of ticks the parasites are visible on superficial examination, but when the degree of infestation is light or moderate the ticks may be overlooked.

Two species of small wasplike insects have been found to breed within the pupae of the stable fly. These insects deposite their eggs through the hard puparium, and instead of an adult stable fly the little parasite emerges.

A very practical tests for controlling the bedbug was made in Ontario, Canada, adapting the method of control of insects infesting granaries and flour mills by superheating. In this instance an eight-room, two-story frame house, badly infested with bedbugs, was during the month of July brought to a very high degree of heat by making up good fires in the heating furnace and other stoves in the house and closing up the house to retain the heat. The eradication of the bedbug from this house was complete, and no damage was done to the house or its contents.

Though sudden heavy rains, especially when combined with low temperatures in winter, reduce the numbers of the Argentine ant, it has been found that it is only a question of months before the normal infestation is regained. Other forms of natural control are of still less importance.

Several species of flies are found commonly in houses. Some of them so closely resemble the true house fly that it requires very careful observation to distinguish them from it. One of these is the biting stable fly. It occurs frequently in houses and differs from the house fly in the important particular that its mouth parts are formed for piercing the skin. This fly is so often mistaken for the house fly that most people think that the house fly can bite.

Roaches may be controlled by the use of (1) poisons and repellents; (2) fumigants; and (3) trapping.

As with nearly all the insects associated with man, the bedbug has had the habits now characteristic of it as far back as the records run. It was undoubtedly of common occurrence in the dwellings of the ancient peoples of Asia. The Romans were well acquainted with it, giving it the name of Cimex. It was supposed by Pliny--and this was doubtless the common belief among the Romans--to have medicinal properties, and it was recommended, among other things, as a specific for the bites of serpents. It is said to have been first introduced into England in 1503, but the references to it are of such a nature as to make it very probable that it had been there long before. Two hundred and fifty years later it was reported to be very abundant in the seaport towns, but was scarcely known inland.

The principal effort to control this dangerous insect must be made at the source of supply--its breeding places. Absolute cleanliness and the removal or destruction of anything in which flies may breed are essential; and this is something that can be done even in cities. It is often necessary to catch or otherwise destroy adult flies, or to protect food materials from contamination and persons from annoyance or danger; hence the value of fly papers and poisons, flytraps, and insect screens.

In the final analysis the prevention of trichinosis is a personal responsibility and involves the thorough cooking of all pork. Pork products of kinds customarily eaten without cooking are also dangerous unless it is definitely known that such products were prepared in a plant operating under Federal meat inspection or equally thorough State or local supervision.

When properly used one application of the pine-tar-cottonseed-oil mixture is usually sufficient to kill all ticks in the ears of the animal at the time of treatment. It should be remembered, however, that the eggs of the tick are not deposited or hatched in the ears of the animal, and a new crop of seed ticks may find lodgment at any time on animals kept in infested places.

The different kinds of North American house ants may be grouped on the basis of origin as follows: (1) Tropical Old-World ants, represented by 12 species; (2) ants introduced from the New-World Tropics, represented by 5 species; (3) native North American ants of temperate regions which occasionally inhabit dwelling houses, represented by 2 species; and (4) such occasional garden and lawn ants as may from time to time become accidental house pests by extending their forays into dwelling house pests by extending their forays into dwelling houses in quest of food, of which 4 native North American species are discussed, and also the introduced European meadow ant.

The true house fly, which is found in nearly all parts of the world, is a medium-sized fly with four black stripes on the back and a sharp elbow in one of the veins of the wings. The house fly can not bite, its mouth parts being spread out at the tip for sucking up liquid substances.

Before feeding, the adult bedbug is much flattened, oval, and in color is rust red, with the abdomen more or less tinged with black. When engorged the body becomes much bloated and elongated and brightly colored from the ingested blood. The wings are represented by the merest rudiments, barely recognizable pads, and the simple eyes or ocelli of most other true bugs are lacking.

A weakly poisoned sirup gives better results than a strong poison, the workers carrying it to the nest and feeding it to the queen and the larvae, eventually exterminating the entire colony of Argentine ants. A strong poison, however, is likely to act as a repellent. As the ants will continue to feed on a weakly poisoned sirup, it is desirable to place it in cans or paraffined paper bags outside of the infested house.

Flytraps may be used to advantage in decreasing the number of flies. Their use has been advocated not only because of the immediate results, but because of the chances that the flies may be caught before they lay eggs, and the number of future generations will be reduced greatly.

An experiment was made to determine the value of various chemicals used for the control of house flies. The results of the tests are shown in Table 1.

Table 1.--Quantity of a chemical and time required to kill five house flies in a I-liter flask at 70° F.

Chemical	Quantity of chemical required	Time required (average of five tests)	Chemical	Quantity of chemical requied	Time required (average of five tests)
	Grams	Minutes		Grams	Minutes
Carbon bisulphide	0.02179	400	Salicylic aldehyde	0.0044	93
Benzene.....	.02028	185	Ortho-nitrophenol	.001	241
Toluene.....	.01548	258	Orthy-bromtoluene	.00265	159
Chlorobenzene....	.01265	85	Para-bromtoluene	.001	318
Brombenzene.....	.00475	133	Orthy-cresol.....	.00064	182
Phenol.....	.003	155	Meta-cresol.....	.00196	223
Iodobenzene.....	.00347	87	Para-cresol.....	.00193	249